



HIDDEN FIGURES

Katherine Johnson, one of the women whose work for NASA was portrayed in the 2016 film *Hidden Figures*, played a crucial role in calculating the trajectories for many manned missions.

According to Wikipedia, "When NASA used electronic computers for the first time to calculate John Glenn's orbit around Earth, officials called on Johnson to verify the computer's numbers; Glenn had asked for her specifically and had refused to fly unless Johnson verified the calculations." In one interview, Johnson said of that incident: "He knew that I was the only woman that worked on it. He said, if she comes up with the same answer that they have, then the computer's right. It took me a day and a half to compute what the computer had given them. Turned out to be the exact numbers that they had."

To honor her work, we present the "hidden figures" in these cryptarithms. Every digit in these division problems (https://en.wikipedia.org/wiki/Long_division) is represented by a letter, and the same letter represents the same digit everywhere it occurs.

Record the letter representing each digit in order from 0 to 9 to reveal a two-word phrase. Then use the letter-digit correspondences to calculate the value of the equation below. Expressing that value using the same letter-digit key will yield your final answer.

$$\begin{array}{r}
 \text{ERUP} \\
 \text{MY} \overline{\text{OUTPUT}} \\
 -\text{OCE} \\
 \hline
 \text{ORP} \\
 -\text{OUR} \\
 \hline
 \text{CUU} \\
 -\text{CMU} \\
 \hline
 \text{CBT} \\
 -\text{CBP} \\
 \hline
 \text{C}
 \end{array}$$

$$\begin{array}{r}
 \text{C} \\
 \text{CORRECT} \overline{\text{MERCURY}} \\
 -\text{MTRRUPM} \\
 \hline
 \text{ROBOT}
 \end{array}$$

$$\begin{array}{cccccccccc}
 & & \text{C} & & & & & & & \\
 \hline
 0 & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9
 \end{array}$$

$$(51 \times \text{CUBE}) + (17 \times \text{ROOT}) - \text{YUM} =$$

00101
00110
00000